



Cylinder Block Cradle (12.25.06)


Special Service Tools


303-596

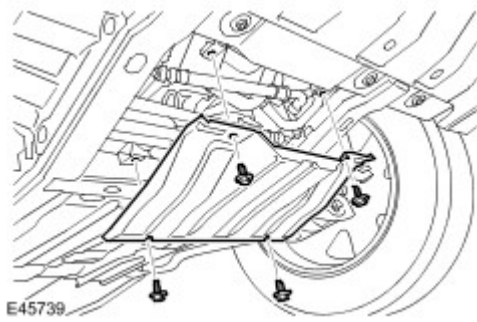


Cylinder block cradle insert adjustment tool
303-596

Removal

- 1 . Disconnect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
- 2 .  **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**


Raise and support the vehicle.
- 3 . Remove the front wheels and tires.
- 4 . Remove the starter motor. For additional information, refer to [Starter Motor \(86.60.01\)](#) (Section 303-06)
- 5 . Remove the front axle tube. For additional information, refer to [Axle Tube \(47.10.42\)](#) (Section 205-03)
- 6 . Remove the oil pan. For additional information, refer to [Oil Pan \(12.60.44\)](#) (Section 303-01)
- 7 . Remove the front stabilizer bar. For additional information, refer to [Stabilizer Bar \(60.10.01\)](#) (Section 204-01)
- 8 . Remove the radiator access panel.
 Remove the 4 bolts.



9. Release the engine oil cooler lines.

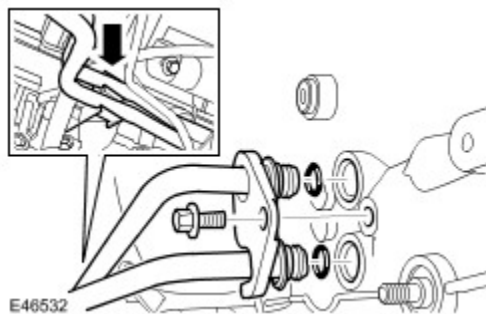
- Remove the bolt.
- Remove the nut.
- Tie the lines aside.




10.  **CAUTION:** Before disconnecting or removing the components, ensure the area around the joint faces and connections are clean. Plug open connections to prevent contamination.

Release the transmission fluid lines.

- Position a container to collect the fluid spillage.
- Remove the bolt.
- Release the clip.
- Remove and discard both O-ring seals.



11.  **CAUTION:** Before disconnecting or removing the components, ensure the area around the joint faces and connections are clean. Plug open connections to prevent contamination.

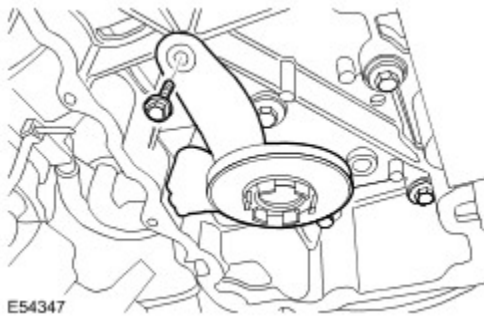
Remove the oil temperature sensor.

- ▶ Disconnect the electrical connector.
- ▶ Remove and discard the O-ring seal.



12. Remove the oil strainer pick-up assembly.

- ▶ Remove the bolt.
- ▶ Remove and discard the 2 O-ring seals.



13. Remove the dipstick.

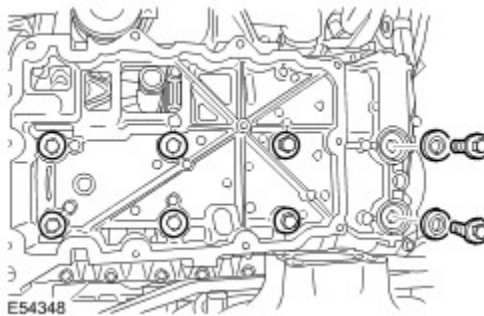
14. Tie the transmiss fluid lines and the engine harness clear of the cylinder block cradle flange.

15. **NOTE :**

Note the fitted position of the 2 sealing washers.

Remove the 8 cylinder block cradle bolts.

- ▶ Remove and discard the 2 sealing washers.

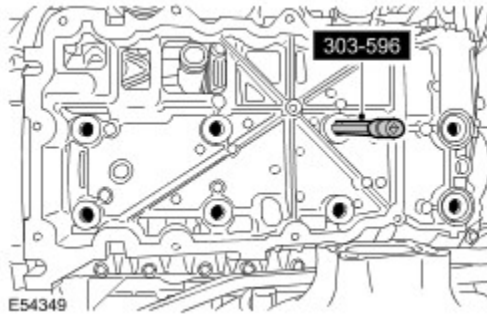


16.



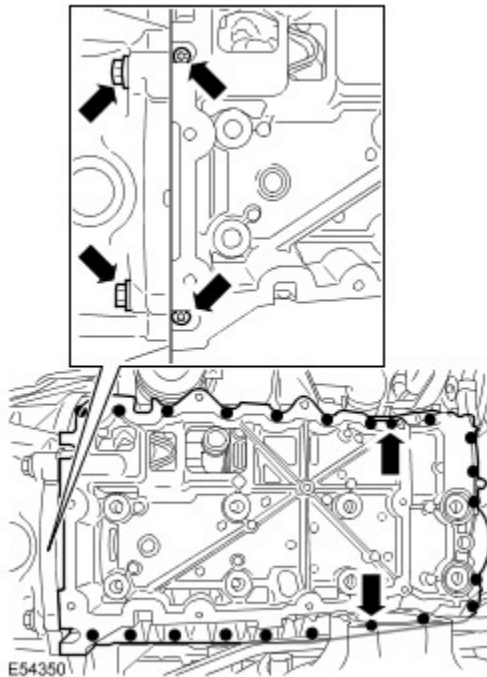
CAUTION: Failure to loosen the set screws may result in damage to the cylinder block cradle.

Using the special tool, loosen the 8 cylinder block cradle set screws.



17. Remove the cylinder block cradle.

- Remove the 2 rear bolts.
- Remove the 2 Torx screws.
- Remove the 2 nuts.
- Remove the 20 bolts.
- Remove and discard the gasket.



Installation

1. Clean the cylinder block cradle.
- Clean the component mating faces.
 - Remove the sealant from the main bearing cap cavities.

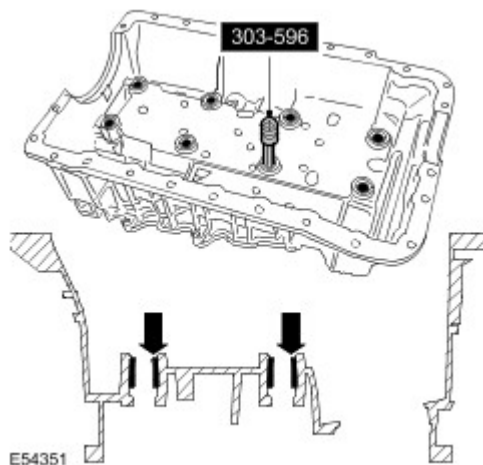
2.



CAUTION: Failure to loosen the set screws may result in damage to the cylinder block cradle.

Position the cylinder block cradle set screws.

- Using the special tool, adjust the set screws until they are below the cylinder block cradle boss face.



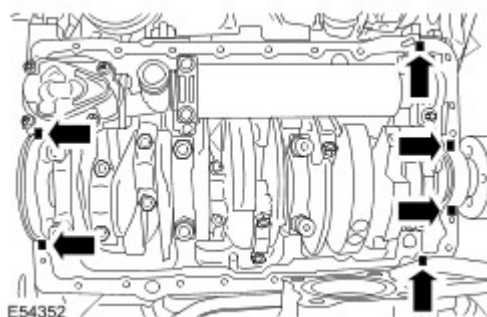
3.

NOTE :

The cradle must be installed within 20 minutes of the sealant application.

Apply sealant to the cylinder block cradle.

- Apply sealant to the 6 places shown.



4.



CAUTION: Make sure the gasket is installed correctly.

Install the cylinder block cradle.

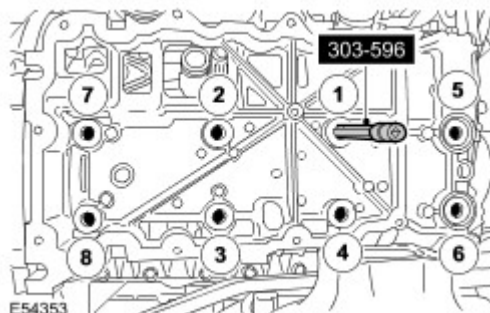
- Install a new gasket.
- Install, then evenly and progressively lightly tighten the outer bolts, nuts and Torx screws.

5.

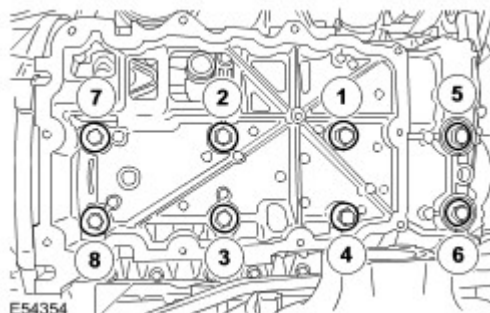
Align the cylinder block cradle to the cylinder block rear face.

- Install and tighten the 2 rear bolts.
- Loosen the 2 rear bolts.
- Lightly tighten the 2 rear bolts.










- 6 . Evenly and progressively, tighten the outer bolts, nuts and Torx screws to 10 Nm (7 lb.ft).
- 7 . Tighten the 2 rear bolts to 43 Nm (32 lb.ft).
- 8 . Using the special tool, tighten the 8 cylinder block cradle set screws.
 - Tighten the set screws in the sequence shown to 7 Nm (5 lb.ft).



- 9 . **NOTE :**
 The sealing washers are fitted to the silver coloured bolts. The silver coloured bolts are fitted in the 2 forward holes.
 Install the 8 cylinder block cradle bolts and tighten in 2 stages.
 - Install 2 new sealing washers.
 - Tighten the bolts in sequence to 15 Nm (11 lb.ft).
 - Tighten the bolts in sequence to 34 Nm (25 lb.ft).



- 10 . **NOTE :**
 Lubricate new seals with clean engine oil.
 Install the oil temperature sensor.
 - Clean the component mating faces.
 - Install a new O-ring seal.
 - Tighten the oil temperature sensor to 20 Nm (15 lb.ft).
 - Connect the electrical connector.
- 11 . **NOTE :**
 Lubricate new seals with clean engine oil.
 Install the oil strainer pick-up assembly.
 - Clean the components.

-  Install new O-ring seals.
 -  Tighten the bolt to 10 Nm (7 lb.ft).
- 12 . Install the oil pan. For additional information, refer to [Oil Pan \(12.60.44\)](#) (Section 303-01)
- 13 . Install the dipstick.
-  Clean the component.
- 14 . Position the engine oil cooler lines.
-  Tighten the bolt and the nut to 25 Nm (18 lb.ft).
- 15 . Attach the transmission fluid lines.
-  Clean the components.
 -  Install the new O-ring seals.
 -  Secure with the clip.
 -  Tighten the bolt to 10 Nm (7 lb.ft).
- 16 . Install the starter motor. For additional information, refer to [Starter Motor \(86.60.01\)](#) (Section 303-06)
- 17 . Install the front stabilizer bar. For additional information, refer to [Stabilizer Bar \(60.10.01\)](#) (Section 204-01)
- 18 . Install the front axle tube. For additional information, refer to [Axle Tube \(47.10.42\)](#) (Section 205-03)
- 19 . Install the radiator access panel.
-  Tighten the 4 bolts to 10 Nm (7 lb.ft).
- 20 . Install the front wheels and tires.
- 21 . Connect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
- 22 . Check and top-up the transmission fluid level. For additional information, refer to [Transmission Fluid Level Check \(44.24.06\)](#) (Section 307-01)